REMARKS

Reconsideration and the timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

In the Office Action dated April 21, 2005, the Examiner rejected claims 1-4, 7, and 17-20, under 35 U.S.C. §102(b), as allegedly being anticipated by Burov '750 (U.S. Patent No. 6,150,750); rejected claims 9-10, 12, 15, and 21-24, under 35 U.S.C. §102(b), as allegedly being anticipated by Tanaka '808 (U.S. Patent No. 6,838,808); and rejected claim 11, under 35 U.S.C. §103(a), as allegedly being unpatentable over Tanaka '808 in view of Burov '750.

The Examiner also indicated that claims 5, 6, 8, 13, 14, and 16 would be allowable if rewritten into independent form.

By this Amendment, Applicants have amended claims 1-3, 9-11, 17-18, 21-22 to provide a clearer presentation of the claimed subject matter. Applicants submit that no new matter has been introduced. In addition, Applicants have introduced new independent claims 25-26, which present the combination of claimed subject matter of claims 1 and 5 and claims 9 and 13. Applicants submit that new claims 25-26 are patentable for the reasons already acknowledged by the Examiner.

Applicants respectfully traverse the prior art rejections, under 35 U.S.C. §102(b), and §103(a), for the following reasons:

I. Prior Art Rejections Under 35 U.S.C. §102(b).

The Examiner summarily asserted that the Burov '750 reference anticipates independent claims 1 and 17. Applicants respectfully disagree.

Independent claim 1, as amended, sets forth a piezo actuating system for moving an object, comprising, *inter alia*:

> wherein the system achieves the movement of said object by performing at least a linear shear sequence and a shuffle sequence, such that:

> (a) said ***linear shear sequence moves said object by having each of said at least two piezo actuators (i) engage said object and (ii) shear from a first position to a second position along a first direction***, and
>
> (b) said ***shuffle sequence returns each of the at least two piezo actuators to the first position after moving said object by (i) releasing the engagement of one of the at least two piezo actuators with said object while maintaining the other of the at least two piezo actuators engaged with said object, (ii) changing a shear state of said one piezo actuator by shearing in a second direction opposite to said first direction, and (iii) engaging the object again using said one piezo actuator***.

As indicated above, amended claim 1 now positively recites that the linear shear sequence moves the object by having each of the at least two piezo actuators engage the object and shear from a first position to a second position along a first direction. Claim 1 further recites that the shuffle sequence returns each of the at least two piezo actuators to the first position, after moving the object, by releasing the engagement of one of the at least two piezo actuators with the object while maintaining the other of the at least two piezo actuators engaged with the object, changing a shear state of the one piezo actuator by shearing in a second direction opposite to the first direction, and engaging the object again using the one piezo actuator. These features are amply supported by the embodiments described in the Specification. (*See e.g., Specification*, par. **[0079] – [0081]**; FIGs. 4A-4B).

Unlike the present invention, there is nothing in the references of record, including the Burov '750 reference, that teaches the combination of features recited in claim 1. In particular, the Burov '750 reference discloses moving an object by having the piezoelectric shifting units **5** and fixing units **6** sequentially release and shift such that only a single piezoelectric unit actually engages the object as it is moved. (*See* Burov '750: col. 3, line 62-col. 4, line 33; FIGS. 15-19). This is similar to the sequence of release and shear movements described in the admitted prior art of FIG. 3. (*See also Specification*, par. **[0075]–[0078]**).

With this said, however, there is nothing in the Burov '750 reference that teaches or remotely suggests that the linear shear sequence moves the object by having each of the at least two piezo actuators engage the object and shear from a first position to a second position along a first direction, as required by claim 1. Nor is there anything in Burov '750 that teaches returning each of the at least two piezo actuators to the first position, after moving the object, by releasing the engagement of one of the at least two piezo actuators with the object

while maintaining the other of the at least two piezo actuators engaged with the object, changing a shear state of the one piezo actuator by shearing in a second direction opposite to the first direction, and engaging the object again using the one piezo actuator, as also required by claim 1.

For at least these reasons, Applicants submit that the Burov '750 reference does not teach the claimed combination of elements recited by amended claim 1. Accordingly, the Burov '750 reference cannot be deemed to anticipate claim 1 and Applicants request the immediate withdrawal of the rejection of claim 1 under 35 U.S.C. §102(b). In addition, because independent claim 17 recites similar features to claim 1, the Burov '750 reference does not anticipate claim 17 for at least the reasons given with respect to claim 1. As such, Applicants request the immediate withdrawal of the rejection of claim 17 under 35 U.S.C. §102(b).

Regarding independent claims 9 and 21, Applicants submit that the Tanaka '808 reference fails to teach the combination of elements respectively recited by these claims. Specifically, much like the Burov '750 reference, Tanaka '808 teaches moving an object by only having one of the actuator portions engage the object as it is moved. (*See* Tanaka '808: col. 8, line 50-col. 10, line 37; FIGS. 2(a)-2(d)). As such, the Tanaka '808 reference fails to teach or remotely suggest that the linear shear sequence moves the object by having each of the at least two piezo actuators engage the object and shear from a first position to a second position along a first direction, as required by claims 9 and 21. Nor is there anything in Tanaka '808 that teaches returning each of the at least two piezo actuators to the first position, after moving the object, by releasing the engagement of one of the at least two piezo actuators with the object while maintaining the other of the at least two piezo actuators engaged with the object, changing a shear state of the one piezo actuator by shearing in a second direction opposite to the first direction, and engaging the object again using the one piezo actuator, as also required by claims 9 and 21.

For at least these reasons, Applicants submit that the Tanaka '808 reference does not teach the claimed combination of elements recited by amended claims 9 and 21. Accordingly, the Tanaka '808 reference cannot be deemed to anticipate claims 9 and 21 and Applicants request the immediate withdrawal of the rejection of claims 9 and 21 under 35 U.S.C. §102(b).

II. Prior Art Rejections Under 35 U.S.C. §103(a).

As best understood, none of the references of record are capable of curing the deficiencies noted above regarding the Burov '750 and Tanaka '808 references. Therefore, none of independent claims 1, 9, 17, and 21 can be rendered unpatentable by any combination of the references of record. As such, claims 1, 9, 17, and 21 are clearly patentable over the references of record.

In addition, because dependent claims 2-8, 10-16, 18-20, and 22-24 depend from claims 1, 9, 17, and 21, respectively, claims 2-8, 10-16, 18-20, and 22-24 are patentable by virtue of dependency as well as for their additional recitations.

III. Conclusion.

All matters having been addressed and in view of the foregoing, Applicant respectfully requests the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims, including claims 1-26.

Applicants' Counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. Please charge any fees associated with the submission of this paper to Deposit Account Number 033975, Order No. 081468/0307210. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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